

REMARKS

This Amendment is filed in response to the Office Action dated October 15, 2004, which has a shortened statutory period set to expire January 15, 2004.

In view of the foregoing amendments and the following remarks, reconsideration of the present patent application is respectfully requested.

In the specification

Paragraph 0028 of the specification is amended for clarity. Since the "hydrophobic paste", "hydrophobic substrate" and "substrate compound" in the original specification all denote the same substances, the three terms in the paragraph [0028] are currently amended as "hydrophobic paste" to clearly illustrate the present invention.

In claim 24

Referring to the paragraph [0028] and Example 2 in the specification, it is understood that the originally recited "substrate for suspending said catalyst" refers to a solvent for suspending the boron nitride supported noble metal catalyst, so as to form a paste, i.e. a paste is formed by suspending the boron nitride supported noble metal in a solvent. Accordingly, the claim 24 is currently amended in order to be clearly illustrated, and therefore there is no new matter added in the current claim 24.

Objection to the claim 35

The word "hydrfocarbon" in the original claim 35 is currently amended as "hydrocarbon".

Rejection under 35 U.S.C. §112

Claims 1-23 are cancelled. The claims 24-28 and 35 are currently amended. All of the amendments can be supported by the specification and figures of the present invention, especially supported by the paragraphs [0027] and [0028] and Example 2 as originally filed in the specification of the present invention, and therefore there is no new matter added therein.

Rejection under 35 U.S.C. §102(b)

Claims 28-35

Claims 28-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Jenkins (U.S. patent No. 4,897,253). The Applicant respectfully traverses this rejection for reasons set forth below. Reconsideration of the present patent application is respectfully requested.

As in the currently amended claim 28, the present invention provides a catalyst for catalytic combustion of a fuel, and the catalyst includes a boron nitride support having a surface; a noble metal dispersed on said surface to form a boron nitride supported noble metal catalyst; and a solvent for suspending said boron nitride supported noble metal catalyst to form a paste.

Please refer to paragraph [0027] of the present invention, which illustrates that the noble metal is dispersed on the surface of BN, and for better soaking on the hydrophobic BN support, an organic solvent of alcohols, preferably methanol is chosen as the diluting solvent.

Referring to Example 2 of the present invention, it is illustrated that Pt/BN is suspended in methanol and the paste is then dispersed onto the supporting material. It is understood by one skilled in the art that the paste is formed by suspending PT/BN

in methanol, and furthermore the paste is a hydrophobic paste.

In U.S. patent No. 4,897,253, the disclosed catalyst system includes platinum, chromium oxide and a support material, such as boron nitride. However, a paste formed from boron nitride supported noble metal catalyst suspended in a solvent is never shown and conceived in the catalyst system of U.S. patent No. 4,897,253. Apparently, the present invention is indeed different from U.S. patent No. 4,897,253.

Furthermore, it is to be emphasized that the outstanding advantages of the catalyst in the present invention are never shown in U.S. patent No. 4,897,253. In the paragraph [0028] of the present invention, the advantages of the catalyst including the paste include (1) reducing the chemisorption of water molecule, (2) preventing the water from competing an active catalyst site and blocking the chemisorption of the fuel molecule on the active metal, and (3) dispersing the exothermal heat from the active metal site due to that the hydrophobic paste is an excellent thermal conductive material.

Based on at least above reasons, the present invention has many features never shown, taught or suggested in U.S. patent No. 4,897,253, so that the present invention cannot be anticipated by U.S. patent No. 4,897,253, and further cannot be achieved by one skilled in the art from the teaching of U.S. patent No. 4,897,253.

Accordingly, the claim 28 of the present invention is patentable over U.S. patent No. 4,897,253. Since the claims 29-35 are all dependent on the claim 28, the dependent claims 29-35 are all also allowable as being dependent on the allowable claim 28.

Claims 24-27

Claims 24-27 are rejected under 35 U.S.C. 102(b) as being anticipated by von Hippel et al (U.S. patent No. 6,048,512).

The Applicant respectfully traverses this rejection for reasons set forth below. Reconsideration of the present patent application is respectfully requested.

As in the currently amended claim 24, the present invention provides a substance for a catalytic combustion, and the substance includes a paste having a boron nitride supported noble metal catalyst suspended in a solvent, and a supporting material having the paste dispersed thereon for increasing a total surface area of the catalyst, thereby the catalytic combustion being initiated within 30 minutes.

Referring to Examples 1 and 2 of the present invention, it is illustrated that $\text{H}_2\text{PtCl}_6 \cdot 6\text{H}_2\text{O}$ is dissolved in methanol and then this solution is added drop wise onto boron nitride, and therefore the supported Pt/BN is formed. Afterward the supported Pt/BN is suspended in methanol and the paste is then dispersed onto the supporting material, so that the substance for a catalytic combustion is formed. It is to be further emphasized that the substance claimed in the claim 24 is formed by (1) dissolving the noble metal in methanol, (2) dispersing the noble metal, such as Pt, on boron nitride (BN) to form the supported Pt/BN, (3) suspending the supported Pt/BN in a solvent to form a paste, and (4) dispersing the paste on the supporting material.

It is to be noted that in U.S. patent No. 6,048,512, the disclosed coating dispersion is formed by mixing the platinum group metals and nitride in a solvent (referring to Column 2, lines 33-55). The coating dispersion disclosed in U.S. patent No. 6,048,512 corresponds to the supported Pt/BN of the present invention. Apparently, "a paste having a boron nitride supported noble metal catalyst suspended in a solvent and a supporting material having the paste dispersed thereon" recited in the claim 24 of the present invention are not shown in U.S.

patent No. 6,048,512. Accordingly, the substance for catalytic combustion claimed in the present invention is different from the catalyst disclosed in U.S. patent No. 6,048,512.

In addition to above mentioned advantages of the paste in the present invention, the paste is provided as an interface substrate for facilitating the further dispersion of the catalyst onto the supporting material, and furthermore through the high surface area supporting material, it is easier for the catalyst to contact with the fuel so as to increase the reaction rate (referring to the paragraph [0028] in the specification of the present invention).

Based on at least above reasons, the present invention has many features never shown, taught or suggested in U.S. patent No. 6,048,512, so that the present invention cannot be anticipated by U.S. patent No. 6,048,512 and further cannot be achieved by one skilled in the art from the teaching of U.S. patent No. 6,048,512.

Accordingly, the claim 24 of the present invention is patentable over U.S. patent No. 6,048,512. Since the claims 25-27 are all dependent on the claim 24, the dependent claims 25-27 are all also allowable as being dependent on the allowable claim 24.

Furthermore, the substance for catalytic combustion claimed in present invention can not be conceived and achieved even by combining U.S. patent No. 4,897,253 and U.S. patent No. 6,048,512.

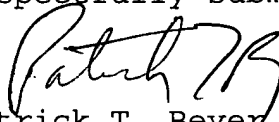
Based on the above amendments and remarks, the allowance of the present invention is respectfully requested.

CONCLUSION

Claims 1-23 are cancelled. Claims 24-35 are pending in the present Application. Reconsideration and allowance of these claims is respectfully requested.

If there are any questions, please telephone the undersigned at (408) 451-5902 to expedite prosecution of this case.

Respectfully submitted,



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